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(54) Title: GOLF TRAINING ARRANGEMENT

(57) Abstract: A golf training arrangement comprise a pair of adjacent ring-shaped guide members defining between them a path for the shaft of a golf club corresponding to an ideal swing, and a free-standing housing for supporting the guide members and designed to accommodate within its confines a person utilising the guide assembly to execute a golf swing.

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## **GOLF TRAINING ARRANGEMENT**

This invention relates to golf training arrangements and is concerned with improvements or and modifications of the golf training arrangement which is the subject of prior UK Patent Application No. 004446.1 dated 25 February 2000, the entire contents of which are incorporated herein by this reference.

The present invention in a first aspect thereof resides in a golf training arrangement comprising a guide assembly comprising a pair of adjacent ring-shaped guide members defining between them a path for the shaft of a golf club corresponding to an ideal swing, and a free-standing housing for supporting the guide members and accommodating within its confines a person utilising the guide assembly to execute a golf swing.

According to a second aspect of the present invention there is provided a golf training arrangement comprising a guide assembly comprising a pair of adjacent ring-shaped guide members defining between them a path for the shaft of a golf club corresponding to an ideal swing, and a floor-standing housing for supporting the guide members and so designed as to accommodate within its confines a person taking up a golf swing stance in the proximity of the guide members and executing a golf swing within the constraints imposed by the guide members, the guide members being supported solely by the housing.

In this manner, the arrangement does not require the guide members to be anchored to structures, e.g the walls or ceiling, forming part of a building in which the arrangement may be installed in use.

Various other features and aspects of the invention will become apparent from the appended claims and the following description of one embodiment of the invention with reference to the accompanying drawings.

In the accompanying drawings:

Figure 1 is a side view of the apparatus showing the golfer in position in readiness for the execution of a golf swing guided by the apparatus;

Figure 2 is an front view of the apparatus;

Figure 3 is perspective view of the apparatus;

Figure 4 is a sectional view taken in the direction III-III in Figure 3; and

Figure 5 is a similar sectional view to that of Figure 4 but given in perspective and showing the positioning of the golf club.

The drawings illustrate a golf training apparatus of the kind accommodated within a housing H and comprising a pair of adjacent ring shaped-guide members 10, 12 which define between them a circumferentially extending path P for the shaft of golf club 14, which path corresponds to an ideal swing. The guide members 10, 12 are fixedly supported in closely spaced relation above ground level by various structural supporting members (some of which are depicted by reference numerals 16) including floor-engaging A-frames 16A. The structural support members may be affixed to suitable points which allow the guide members 10, 12 to be stably supported without moving during use of the apparatus.

The guide members 10, 12 are both generally circular and are supported at an inclination such that their lowermost extremities are, with respect to the intended stance of the user (see Figure 1), forwardly positioned relative to their uppermost extremities with the guide member 10 in superimposed relation with the guide member 12. The guide members 10, 12 are also of dished, curvilinear configuration as illustrated and define a guide slot S which is of substantially constant width W (see Figure 4) around the entire guide path P but varies in depth (as considered in a radial direction) around the guide path, being of greater depth at the lowermost extremities and of lesser depth of the upper extremities of the guide members. Such variation in slot depth occurs progressively. Adjacent their upper extremities, the guide members 10, 12 (and hence the corresponding region of the guide slot) are substantially vertically disposed. To allow use by both left handed and right handed golfers, the guide members 10, 12 are of substantially symmetrical configuration with respect to a vertical plane extending in the fore-and-aft direction. The apparatus is illustrated in use by a right handed golfer in Figures 1 and 2.

Stance position defining means relative to which the golfer can adopt a stance appropriate to the path defined by the guide members 10, 12 are provided. Such means include a line 20 and markers 22 at the base of the apparatus, e.g. floor level. The line 20 is contained within a vertical plane which passes through the curvilinear planes defined by the guide members 10, 12 and is orthogonal to the vertical fore-and-aft plane of symmetry. This line is intended to facilitate correct positioning of the feet in the fore-and-aft direction. The markers 22 serve to indicate the extent to which the feet should be spaced and also the direction in which the feet should be splayed when adopting an optimum stance. The base/floor is also marked or provided with means to indicate the correct placement of the ball relative to the guide members, the correct placement position being so located that, with the club shaft located centrally between the guide members at the lower extremities thereof, the club head is aligned with the ball B.

The stance position defining means also includes head positioning means in the form of a padded head restraint 24 which is located forwardly of the curvilinear planes defined by the guide members and also forwardly of the line 20. In use of the apparatus, the golfer will adopt a stance with the head located against the head restraint. The head restraint is mounted for vertical adjustment, e.g. on a shaft 26, so that its vertical location can be varied according to the stature of the golfer. The head restraint 24 is also adjustable so that it can be repositioned on the other side of the golfer's head thereby catering for right and left handed golfers. In addition, the head restraint may be adjustable horizontal in a direction transverse to the fore and aft direction.

Additional stance position defining means are provided in the form of knee position defining and/or knee movement restraining means comprising a pair of spaced rails 28 which extend generally horizontally in the fore-and-aft direction so that the golfer can adopt a stance with his legs contacting the rails 28 in the knee region. Knee positioning and/or movement restraint may also be provided by a generally horizontal bar or flexible strap (not illustrated) located forwardly of the golfer and in vertically spaced relation to the line 20.

Further stance position defining means are provided for constraining the posterior of the golfer, in the form of a substantially horizontal cross-member 32 extending transversely of the fore-and-aft direction and supported by arms 34 at a location proximate the lumbar region of the golfer.

Any one or more of the various stance position defining means may be adjustable to cater for golfers of differing statures. However, at any given golf practice centre, it is envisaged that there will be a number of swing apparatuses each as described above and each being designed for golfers within a respective height range.

Each guide member 10, 12 is fabricated from a welded, substantially flat annular structure which is contoured with a dished configuration, i.e concave in the rearwards direction X in Figure 1. The annular structure has a substantial radial extent so that the two structures forming guide members 10, 12 effectively form an annular slot for constraining the golf club shaft during the swing, in particular constraining the shaft from pivoting on either guide member as a fulcrum during the course of executing the swing. An optimum swing would therefore involve swinging the club so that the shaft remains substantially central within the annular slot as it travels around the path defined by the guide members, i.e. without tilting/fulcrumming about the edges of the annular structure. In this manner, by attempting to minimise or avoid such tilting of the shaft the golfer is trained to develop musculature and technique consistent with executing an optimum swing.

The annular structure forming each guide member 10, 12 comprises a pair of rails fabricated from flat strip metal, viz. a radially inner rail 40 and a radially outer rail 42 interconnected by struts 44A, 44B which, for clarity, are depicted for the most part in phantom. The struts 44A extend generally radially with respect to the guide members 10, 12 while the struts 44B extend obliquely between the points of intersection of struts 44A with the inner and outer rails 40, 42 as illustrated in Figure 2. The edge of each strip-shaped rail 40, 42 facing the other guide member is provided with a low friction guide surface 46, which is convexly arcuate in transverse cross-section, for contact with the club shaft. Such surface may also have a cushioning effect when contacted by the club shaft. The guide surfaces 46 of each guide member and are arranged in confronting, aligned relation with the corresponding edge portions of the other guide member and thereby define the inner and outer radial boundaries of the slot S formed between the guide members. It will be observed that the guide surfaces 46 of guide member 10 are convexly curvilinear while those of guide member 12 are concavely curvilinear.

The previously mentioned structural supporting members (some of which are depicted by reference numeral 16 and 16A) may be connected to the guide members 10, 12 via the radially inner rails 40 thereof and may be arranged to extend away from the radially outer rails 42. At least some of the supporting members may be connected at the intersections between the rails 40 and/or 42 and the struts 44.

As shown in Figure 1, the housing H comprises a framework having a rear support frame 52 and a front support frame 54 upstanding from a base 56. The base 56 incorporates a platform 58 on which the user takes up a stance in preparation for executing a swing. The line 20 and markers 22 are located on the platform 58. Parallel beams 60 (only one of which is shown) form part of the base and extend between substantially vertical uprights 64 and inclined uprights 66 forming part of the rear and front frames respectively. The two sides of the housing are interconnected by upper and lower cross members, e.g. 68A and 68B. Only the lower cross member forming part of the front support frame 54 is visible in Figure 1.

The A-frames 16A which mount the guide member 12 are carried by the beams 60. The apices of the A-frames are connected to the lower half of the inner radial rail 40 of the guide member 12 in the vicinity of the intersections between struts 44, 44A. The upper half of the guide member 12 is supported in cantilevered fashion by struts 16 extending forwardly from the upper ends of the uprights 64, the inner ends of these struts 16 being connected to the inner rail 40 of guide member 12 in the vicinity of the point of intersection between struts 44, 44A. The guide member 10 is supported in cantilevered fashion by struts 16 extending rearwardly from the upper ends and from lower parts of the inclined uprights 66 and connected to the inner rail 40 in the vicinity of the intersections between the struts 44, 44A of the guide member 10.

The guide member supporting struts 16 and the A-frames 16A are so arranged so arranged as to afford room for a golfer to stand within the confines of the

housing H and swing a club located between the guide members 10, 12. The front support frame 54 is disposed at an angle to the vertical corresponding, e.g. substantially parallel, to the inclination of the guide members 10, 12. The rear support frame is shown as being braced by webs 72 to the base 56. The front support frame may be likewise braced by webs (not shown) to the base 56.

The drawings illustrate a housing 21 with a golf training apparatus of the kind comprising a pair of substantially circular, laterally closely spaced frame members 11, 12 which define a preferred swing path for a golf club 19, the housing 21 comprising a framework having a rear support frame 22 and a front support frame 23 upstanding from a base 24 and having support strut means 25 extending from the rear support frame 22 to a rear one 12 of the pair of circular frame members and from the front support frame 23 to a front one 11 of the circular frame members, the strut means 25 and the front and rear support frames 22, 23 being so arranged as to afford room for a golfer to stand between the frame members 11, 12 and swing the club 19 between them.

The various components making up the housing and the golf swing apparatus accommodated thereby can, if desired, be supplied in a flat pack kit ready for *in situ* assembly by bolting them together. The base 56 may be bolted to the floor of a building or alternatively the housing may be mobile, e.g. supported on wheels or castors, to allow the whole assembly to manouvre easily. After being moved to a desired position, the housing may be rendered stationary by any suitable means such as braking device(s) associated with the wheels/castors or a jacking device or devices for jacking the housing up to move the wheels/castors clear of ground engagement.

As disclosed in the prior UK Application No. 004446.1, a range of sizes of housing and golf swing apparatus can be provided suitable for golfers of different heights and disposed in a row so that more than one golfer at a time - provided, of course, they are of different heights - may practise in a relatively small space but without risk of

getting in each other's way. However, the individual sizes would be available as single units for supply to golfers for home practice, the flat-pack design facilitating this.

It will be appreciated that the invention is not intended to be limited to the details of the illustrated embodiment which is described by way of example only.

Whilst endeavouring in the foregoing specification to draw attention to those features of the invention believed to be of particular importance, it should be understood that the Applicant claims protection in respect of any patentable feature or combination of features disclosed herein and/or shown in the drawings whether or not particular emphasis has been placed on such feature or features.

**CLAIMS**

1. A golf training arrangement comprising a guide assembly comprising a pair of adjacent ring-shaped guide members defining between them a path for the shaft of a golf club corresponding to an ideal swing, and a free-standing housing for supporting the guide members and designed to accommodate within its confines a person utilising the guide assembly to execute a golf swing.
2. A golf training arrangement comprising a guide assembly comprising a pair of adjacent ring-shaped guide members defining between them a path for the shaft of a golf club corresponding to an ideal swing, and a floor-standing housing for supporting the guide members and so designed as to accommodate within its confines a person utilising the guide assembly to execute a golf swing, the guide assembly being supported solely by the housing.
3. An arrangement as claimed in Claim 1 or 2 in which the housing includes a base frame above which the guide assembly is supported.
4. An arrangement as claimed in Claim 3 in which the base frame includes a floor section on which the user can stand while using the guide members to execute a golf swing.
5. An arrangement as claimed in Claim 4 in which the floor section is provided with stance positioning defining means.
6. An arrangement as claimed in Claim 4 or 5 in which at least one of the guide members is supported at least in part from the base frame.

7. An arrangement as claimed in any one of Claims 1 to 6 in which at least one of the guide members is supported from the housing in cantilevered fashion.
8. An arrangement as claimed in any one of the preceding claims in which the guide members extend laterally of a fore and aft vertical plane and are inclined relative to the vertical with one guide member in superimposed relation and spaced from the other, the housing comprising a first frame located forwardly of the guide members and from which said one guide member is supported and a second frame located rearwardly of the guide members and from which the other guide member is supported.
9. An arrangement as claimed in Claim 7 in which said one guide member is supported in cantilevered fashion from said first frame.
10. An arrangement as claimed in Claim 8 or 9 when dependent on Claim 4 or 5 in which the other guide member is supported in part by the second frame and in part from the base frame.
11. An arrangement as claimed in any one of Claims 8 to 10 in which the first and second frames are inclined relatively with respect to one another.
12. An arrangement as claimed in Claim 11 in which the second frame is substantially vertically disposed and the second frame is inclined rearwardly towards the first frame.
13. An arrangement as claimed in Claim 12 in which the second frame is inclined in the same sense as the guide members.
14. An arrangement as claimed in Claim 13 in which the second frame is inclined at generally the same angle to the vertical as the guide members.

15. An arrangement as claimed in any one of the preceding claims in which the guide members are supported relative to a stance position, and stance position defining means against which, within the confines of the housing, a golfer can adopt a stance appropriate to the path defined by the guide members.
16. An arrangement according to claim 15 in which the stance position defining means comprise foot position markers.
17. An arrangement according to claim 15 or 16 which the stance position defining means comprises a head position defining member.
18. An arrangement according to claim 17 in which the head position defining member comprises a padded head constraint.
19. An arrangement according to any one of claims 15 to 18 in which the stance position defining means comprises knee position defining means.
20. An arrangement according to claim 19, in which the knee position defining means comprises rails at knee height and extending generally fore and aft relative to the intended stance position taken up by a golfer using the apparatus.
21. An arrangement according to any one of claims 15 to 20 in which the stance position defining means comprises a lumbar region defining means.
22. An arrangement according to claim 21 in which the lumbar region defining means comprises a rail at lumbar region height extending generally parallel to the said path.

23. An arrangement according to any one of claims 15 to 22 comprising knee movement restraining means.
24. An arrangement according to claim 23, in which the knee movement restraining means comprises a flexible strap extending at knee height generally parallel to the said path.
25. An arrangement according to any one of claims 15 to 24, in which the guide members each comprise substantially flat annulus shaped to have a dished configuration.
26. An arrangement according to claim 25, in which the annuli have a radial extent which is greater than the separation of the guide members so as to form an annular slot constraining the shaft of a golf club against pivoting on either guide member as a fulcrum.
27. An arrangement according to any one of claims 1 to 26 of which the guide members have substantial symmetry about a vertical plane through their upper and lower extremities so that the apparatus is adapted for left and right handed swingers.
28. An arrangement according to claim 27 having a head position defining member adjustable for right and left handed swingers.
29. An arrangement according to any one of Claims 1 to 28 in which the guide members each provide at least two radially spaced, annular guide surfaces which bound said path.
30. An arrangement according to any one of claims 1 to 29 in which the guide members each comprise a pair of rails, radially one inside the other, connected by struts.

31. An arrangement according to claim 30 in which the radially inner rails of each pair have supporting members extending away from the other pair of rails for attaching the guide members to supporting means.
32. An arrangement according to claim 31 in which the supporting members are attached to the rails at intersections of the rails and struts.
33. An arrangement according to any one of claims 30 to 32 of welded construction.
34. An arrangement as claimed in any one of the preceding claims in which said path has a depth, as determined by the radial extent of said guide members, which is greater than its width, as determined by the spacing between the guide members.
35. An arrangement as claimed in any one of the preceding claims in which the inner and outer radial boundaries of the path are defined by respective pairs of radially spaced inner and outer circumferentially extending portions of the guide members, the radial spacing between said boundaries being greater in a lower region of the guide members than in an upper region thereof.
36. An arrangement according to Claim 34 or 35 in which the guide members each provide at least two radially spaced, annular guide surfaces which bound said path.
37. An arrangement according to Claim 36 in which said guide surfaces are of convex configuration in cross-section.
38. An arrangement as claimed in any one of Claims 34 to 37 in which each guide member comprises a radially inner rail and a radially outer rail which are interconnected with each other, each rail having an edge portion which is presented

inwardly with respect to said path such that the inwardly presented edge portions of each guide member are substantially in alignment with the inwardly presented edge portions of the other guide member.

39. An arrangement as claimed in any one of Claims 34 to 38 in which the radial spacing between the rails of each guide member varies in the circumferential direction.

40. An arrangement as claimed in Claim 39 in which said radial spacing is greater in the vicinity of the lower region of the guide members and is reduced in the vicinity of the upper regions thereof.

41. A golf training arrangement substantially as hereinbefore described with reference to, and as shown in, the accompanying drawings.

Fig. 1

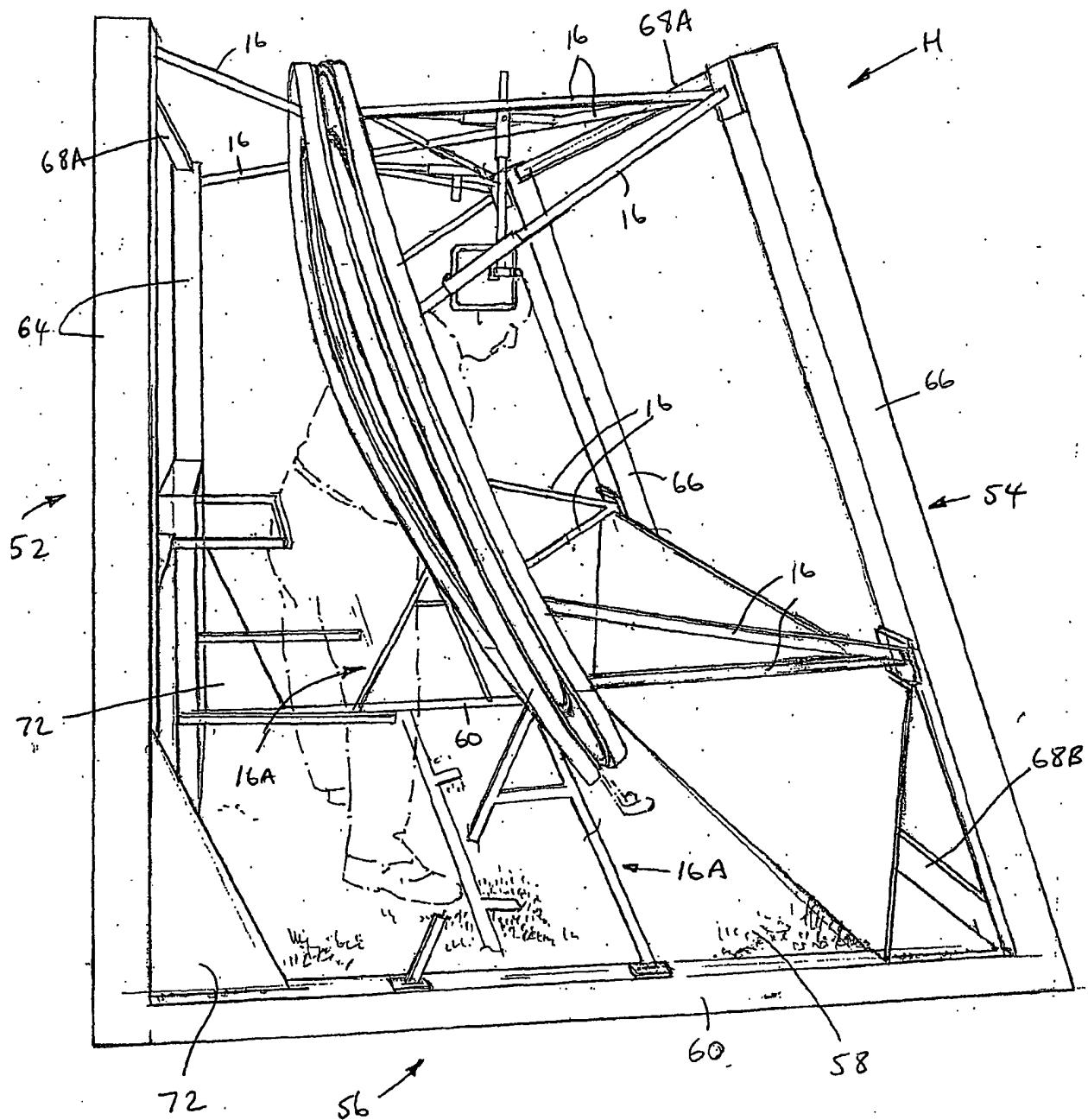


Fig 2

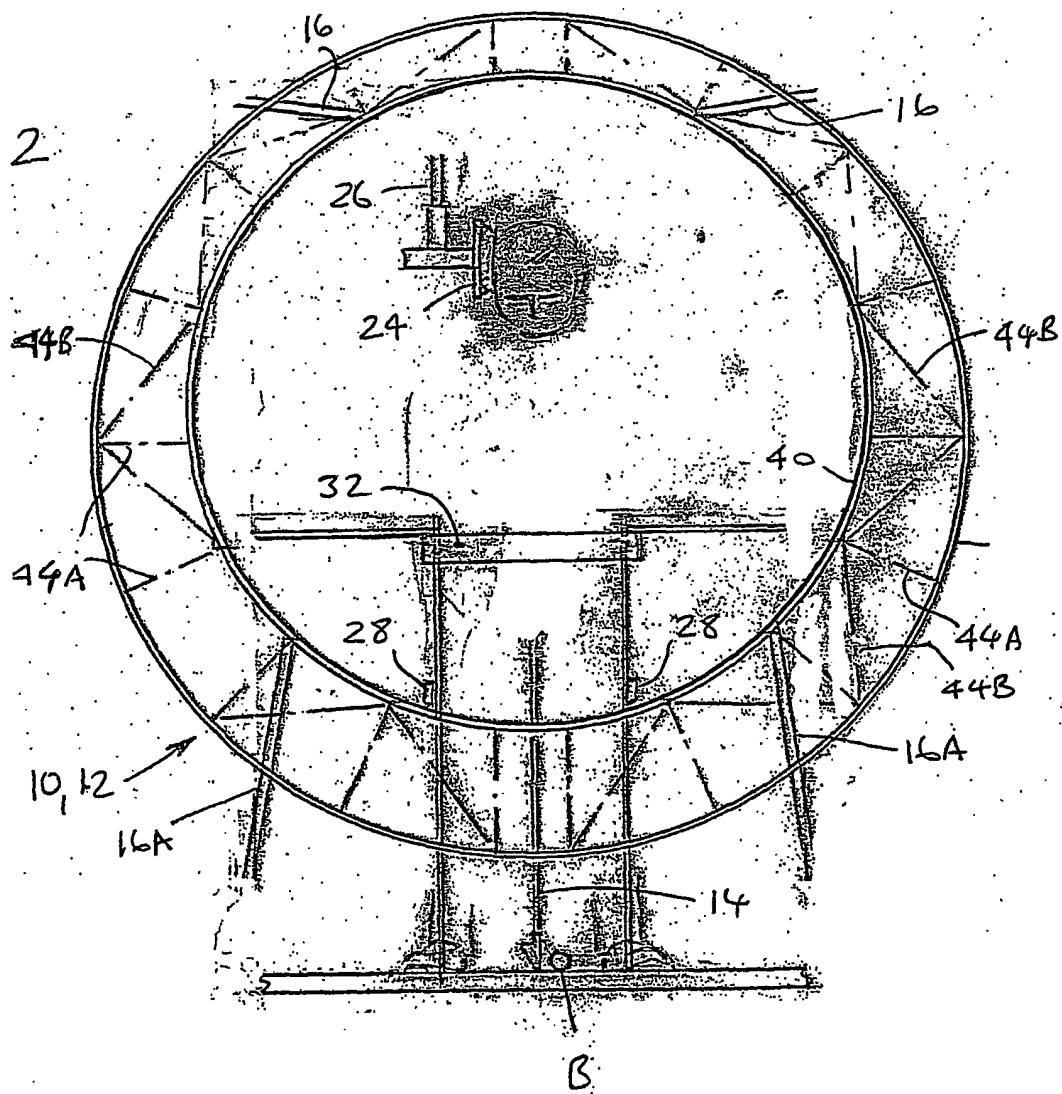


Fig 3

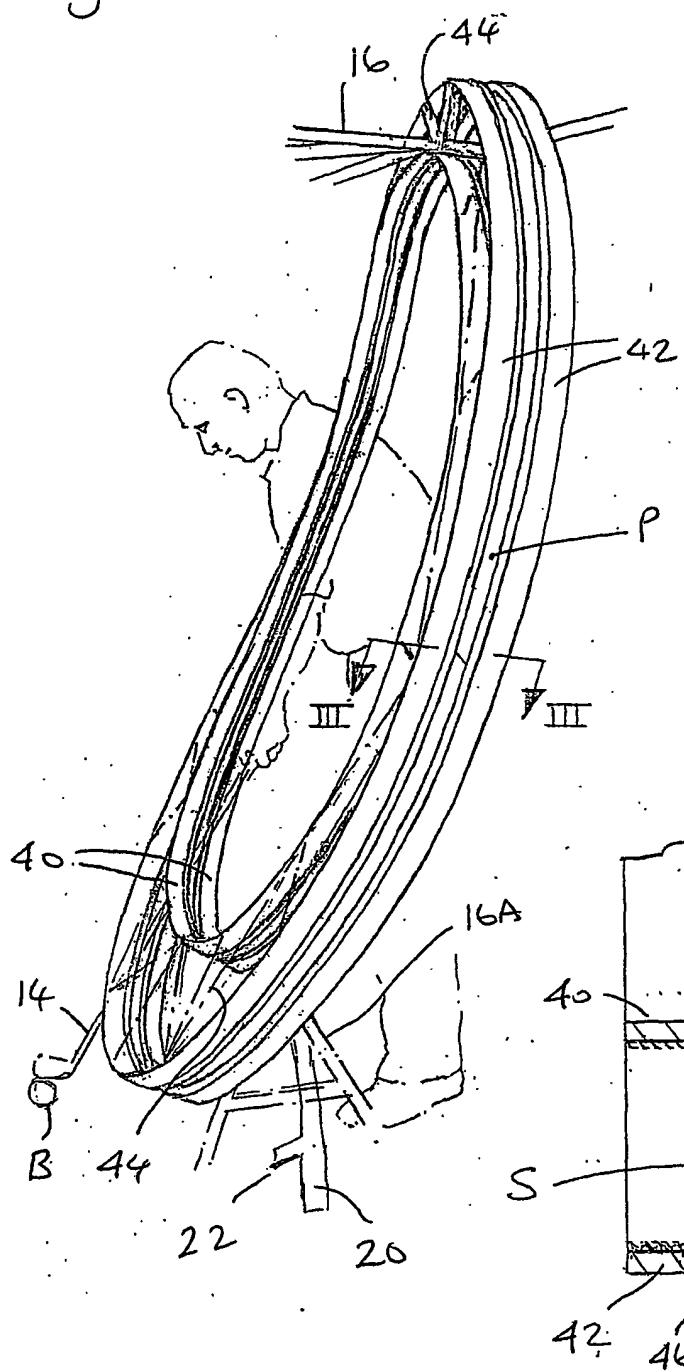


Fig 4

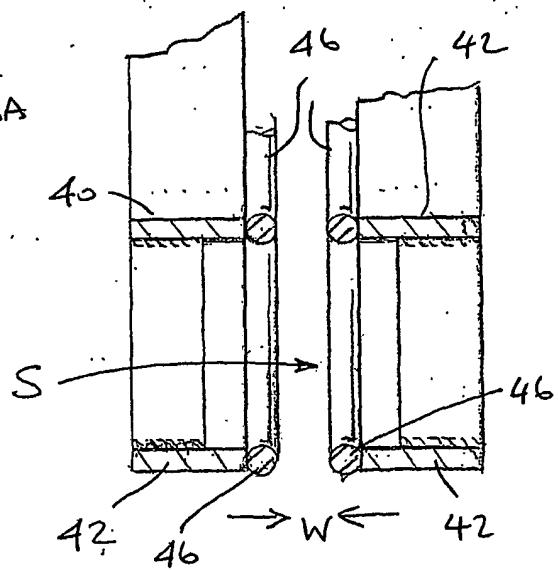
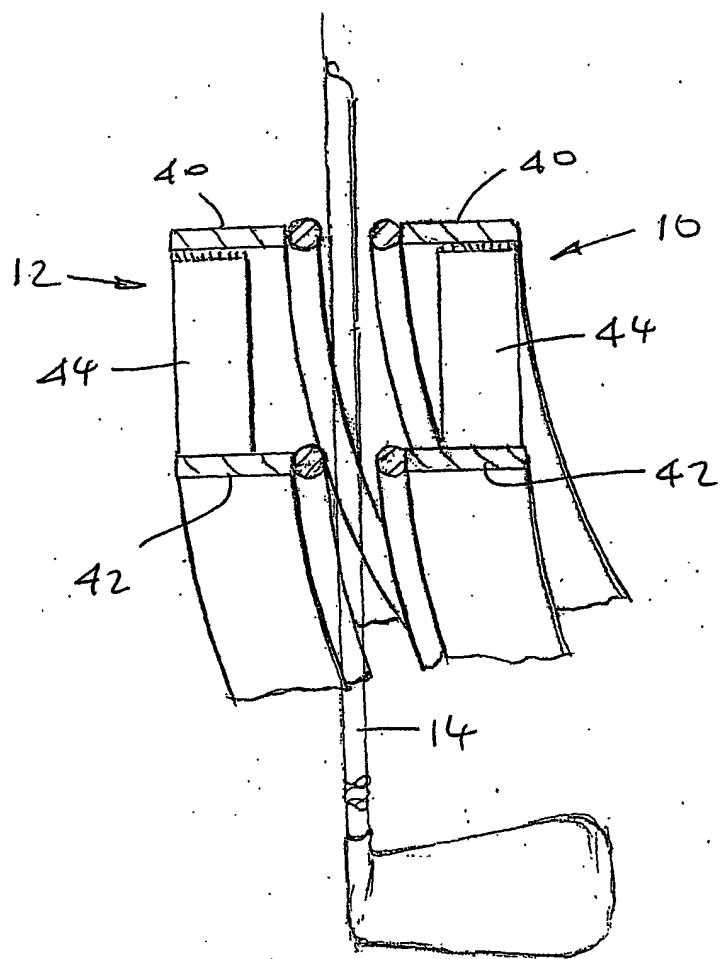


Fig 5



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